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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,169	09/16/2003	Steven A. Buhler	D/A2559	3335

7590 09/09/2005

Patent Documentation Center
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EXAMINER

VO, HAI

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/664,169	BUHLER ET AL.	
	Examiner	Art Unit	
	Hai Vo	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The claim objections are withdrawn in view of the present amendment.
2. All of the art rejections are withdrawn in view of the present amendment.

However, upon further consideration, new ground of rejection is made in view of JP 08-205288 in view of Ohya et al (US 6,111,339).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9, and 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08-205288 in view of Ohya et al (US 6,111,339). JP'288 discloses a piezoelectric transducer comprising a metallic substrate 11 bonded to a piezoelectric ceramic plate 12 via an adhesive 14 as shown in figure 1. JP'288 discloses the metallic substrate provided with a plurality of recesses having a width and a depth extending partially through the metallic substrate and at least partially filled with the adhesive in the bonding surface. JP'288 discloses the recess having a depth of 0.05 mm [0010], which reads on Applicant's aperture depth. Figure 1 shows that at least one groove extends between at least two recesses. Figure 1 also shows that the recesses comprise no more than 50% of the bonding surface. JP'288 does not specifically disclose the piezoelectric ceramic plate being porous. Ohya, however, discloses a piezoelectric transducer made from a porous piezoelectric ceramic sheet and an electrode attached to

each surface of the porous piezoelectric ceramic sheet. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the porous piezoelectric ceramic plate because such is intended use of the material and Ohya provides necessary details to practice the invention of JP'288. JP'288 does not specifically disclose the portion of the adhesive being absorbed into the porous ceramic plate. However, the combined teachings of the cited references arrived at the porous material bonded to a non-porous material as presently claimed. The modified piezoelectric transducer comprises a metallic substrate 11 bonded to a porous piezoelectric ceramic plate 12 via an adhesive 14 wherein the metallic substrate is provided with a plurality of recesses having a width and a depth extending partially through the metallic substrate and at least partially filled with the adhesive in the bonding surface. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. Hence, it is not seen that the portion of the adhesive could not have been absorbed into the porous ceramic plate because like material has like property. The same token is applied to the presence of adhesive residue on the bonding surface.

JP'288 does not specifically disclose the width of the recess. However, Since the recess width is recognized as a result-effective variable, differences in recess width will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such recess width is critical or provides unexpected results. Therefore, in the absence of unexpected results, it

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would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the recess having a width in the range instantly claimed motivated by the desire to improve bonding strength between the metallic substrate and ceramic plate. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

Response to Arguments

5. All of the art rejections have been withdrawn because none of the applied references teaches or suggests a roofing assembly wherein the apertures extend partially through the non-porous substrate but rather extend completely through the non-porous substrate.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

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calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on M,T,Th, F, 7:00-4:30 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

Hai Vo

**HAI VO
PRIMARY EXAMINER**